

## ABSTRACT

A method is provided for generating a group digital signature wherein each of a group of individuals may sign a message M to create a group digital signature S, wherein M corresponds to a number representative of a message,  $0 \leq M \leq n-1$ , n is a composite number formed from the product of a number k of distinct random prime factors  $p_1 \cdot p_2 \cdot \dots \cdot p_k$ , k is an integer greater than 2, and  $S \equiv M^d \pmod{n}$ . The method may include: performing a first partial digital signature subtask on a message M using a first individual private key to produce a first partial digital signature  $S_1$ ; performing at least a second partial digital signature subtask on the message M using a second individual private key to produce a second partial digital signature  $S_2$ ; and combining the partial digital signature results to produce a group digital signature S.

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